BONANZA
CEMENT TILE ROOFING

AMERICAN CEMENT TILE
MANUFACTURING COMPANY

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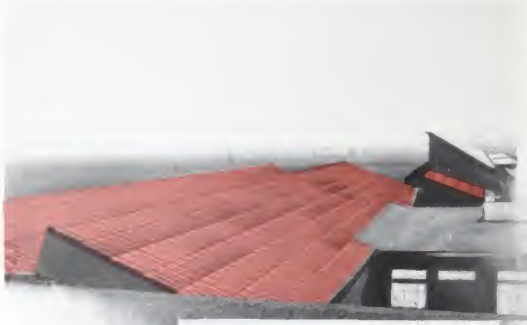
REINFORCED WEAR-PROOF AND FIRE-PROOF

CEMENT TILE FOR PITCHED AND FLAT ROOFS AS APPLIED TO INDUSTRIAL BUILDINGS

AMERICAN CEMENT TILE MANUFACTURING COMPANY

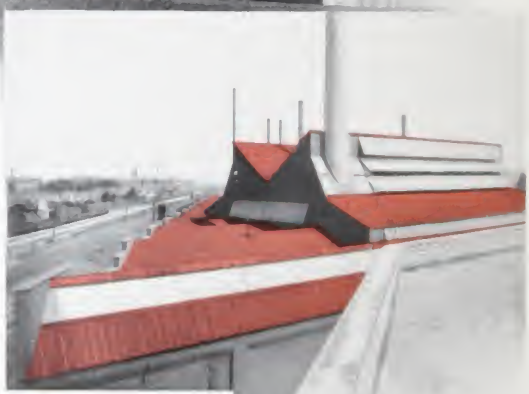
General Offices:
OLIVER BLDG., PITTSBURGH, PA.

BRANCH OFFICES: NEW YORK PHILADELPHIA TARTELANS ST. LOUIS
WORKS: WAMPUM, PA. LINCOLN, N. J. FAIRFIELD, ALA.



Hitchings & Co.
Elizabeth, N. J.

Machine Shop and Garage. 10,000 square feet. Installed 1912-1913. This shows the pleasing appearance of "Bonanza."



Owens Bottle Machine Co.
Toledo O.

Factory 66,000 sq. ft. Installed April, 1912. This picture shows the open ridge covering and four-inch coped gable walls built as shown. Also special covered file coping with red finish for painted for gable walls. Addition, June, 1914.

Georgia Power Co.
Tallulah Falls Ga.

Showing unusual difficulties in construction, material being lowered down incline. High-tension Hydro Electric Power Buildings. This shows the value of "Bonanza" protecting electrical machinery approximating hundreds of thousands of dollars in value.

Bonanza Cement Tile Roofing

BRIEFLY stated, a large reinforced cement tile with a red outer surface as shown and illustrated, laid directly on steel channel purlins, spaced approximately four feet apart, requiring no sheathing or further waterproof covering, light in construction (less than 14 pounds per square foot, the equivalent of slate on two-inch sheathing), readily applied, pleasing in appearance, fireproof and waterproof and, all in all, a roof of quality and with the backing of reputable manufacturers.

"Bonanza" Interlocking and Overlapping Reinforced Cement Tile for pitched roofs and the 1½-inch Flat Tile for flat roofs, are the outcome of an experience with cement tile dating back approximately 20 years. Being the pioneer product in its particular field and having been on the market for more than ten years "Bonanza" is recognized today as standard among Engineers, Architects and Mill Owners, and "Bonanza" reputation backs its products with an ample guarantee.

This booklet shows types of construction for various lines and purposes, as found amongst the many thousands of installations, and suggests to the user its many possibilities. No aim has been made here to give details, a valuable booklet being available at request, showing actual steel design and "Bonanza" application.

There is little doubt that the roofing problem is the most important in the design of a mill building, as it is the roof which protects contents and employees, aside from a consideration of maintenance efficiency and resistance to fires. The pages which follow at the end of the book, give a general description and information, and if the book serves its purpose, a trial will prove "Bonanza" reputation and perfection.

Pittsburgh Crucible Steel Co., Midland, Pa.

Continuous Rolling Mill and Furnace Bldg., comprising Merchant Mill Dept., with a total length of over 1,000 ft., and approximately 170,000 sq. ft. of roof area. Installed 1914.

Pittsburgh Crucible Steel Co., Midland, Pa.

Foundry, Machine Shop, Carpenter Shop and Store House
Part of a total installation of approximately 600,000 square feet of "Bonanza" Roofing
Installed 1914

J. H. Scott & Co., Designing Architects

Detroit & Windsor Dancing Pavilion, Bois Blanc Island, Ontario

50,000 square feet

This is one of the largest and finest dance floors in North America

Interior View of Detroit & Windsor Dancing Pavilion

Bethlehem Steel Co., So. Bethlehem, Pa.

Showing Pit Furnace Bldg., Open Hearth, Converter and Electric Furnace Casting, a total length of approximately 1000 feet. In addition to the By-products Plant covered with "Bonanza," a total of 15 buildings since 1909 to June, 1914, with a roof area of over 300,000 square feet have been covered.

Tennessee Coal, Iron & R. R. Co., Ensley, Ala.

Entire Coke By-products Plant covered with some 150,000 square feet of "Bonanza."

[illegible] Engr. Co., New York, Engineers [illegible]

Crane Valve Co., Bridgeport, Conn.

100,000 square feet from September, 1911 to October 1913

The machine shop was re-covered in one month during the winter, the slag roof having been removed and tile laid without any interruption. This installation is one where re-orders have been frequent and large.

P. C. C. & St. L. R. R., Indianapolis, Ind.

Outbound Freight House and Office 52,000 square feet Installed May 1913
Note hip roof construction on the office

Libbey-McCarthy Co., Toledo, Engineers

Toledo Glass Co., Toledo, Ohio

Installed August, 1912. This entire roofing contract including steel, sheet metal work, composition covering in gutters and siding handled by the "Bonanza" organization.

Toledo Glass Co., Toledo, Ohio

Interior Furnace Building.

Showing "Pond" Truss construction with the flat "Bonanza" gutter construction and "Bonanza" interlocking tile above

Walter Kibbe, New York, Engineers and Contractors

Barlow Foundry Co., Newark, N. J.

Entire Plant. 35,000 square feet. Installed October, 1913. Note finish at ridge and gable ends of saw tooth sections.

Barlow Foundry Co., Newark, N. J.

See formation of gutter saddles for slope. All ready for waterproof covering, after which the interlocking tile are placed above.

Kidder-Linn Engineering Co., New York, Engineers. Nicola Bldg. Co., Contractors

Crescent Portland Cement Co., Wampum, Pa.

800,000 square feet of roofing covering entire plant. The original contract was erected in 1908, with repeat orders every year since.

Crescent Portland Cement Co.

This view gives a good idea of the method of laying tile on channel purlins. Note overlap of four inches and break in joints.

McClintic-Marshall Co., Engineers and General Contractors

Union Switch & Signal Co., Swissvale, Pa.

Showing Foundry, Machine and Forge Shops. An area of 140,000 square feet
Erected 1907.

Ernest McGeorge, Cleveland, Engineer McClintic-Marshall Co., Contractors

Parish & Bingham Co., Cleveland, Ohio

Showing interior view of building, 100 x 900, covered with 1½-inch flat tile

Duncan McCarthy Co., Toledo, Engineers

The Toledo-Owens Glass Sand Co., Silica, Ohio

Entire Plant: 37,000 square feet. Installed June, 1913. This is the fourth complete plant covered with "Bonanza" for the same interests.

Dodge Mach'y Co., New York City, Engineers and Contractors

Bethlehem Steel Co., So. Bethlehem, Pa.

Coke By-products Plant.

60,000 square feet. Installed October, 1912.

Jas. B. Baker, New York, Architect. R. I. & C. D. Stewart Contracting Co., Easton, General Contractor.

Lafayette College, Easton, Pa.

Mechanical Laboratory. Installed April, 1912.

Lafayette College, Easton, Pa.

Interior View. Showing the lighting effect from our glass insert tile, each glass tile being 14 x 24 inches, of ¾-inch wire ribbed glass.

Baldwin Locomotive Works, Eddystone, Pa.

Forge and Blacksmith Shop Installed 1910. This is a typical construction with a very wide concrete gutter pitched to the ends.

Baldwin Locomotive Works, Eddystone, Pa.

Erecting Shop. Installed 1911.

Detroit Steel Products Company, Detroit, Mich.

(80,000 square feet)

First installation May, 1908, with repeat orders in 1909-10-11-12

Belmont Iron Works, Eddystone, Pa.

(18,000 square feet. Installed December, 1911)

Panama Canal

The Engineering Wonder of the Age

WITH the completion of the Panama Canal, connecting the two great oceans in this hemisphere, we see accomplished one of the greatest engineering feats of all times. In design and construction, the United States army engineers employed the most modern and approved materials and engineering skill. While first cost was always a consideration, permanency and low maintenance costs were uppermost in their mind.

At Balboa, the terminal on the Pacific of both the canal and Panama Railroad, owned by the United States Government, it was found necessary to erect large shops and piers to provide for their repairs and upkeep. The Panama Railroad is an overland carrier, approximately 50 miles in length, connecting the port of Colon on the Atlantic with Balboa on the Pacific. The size and enormity of these buildings are noted in the enclosed views. They will not only operate for the Government, handling the largest battleships, but will also engage in a general commercial business with private steamship companies in the repairs of their steamers.

The most important question under consideration with the Isthmian Canal Commission in designing these shops, was the vexatious roof problem, and it was finally decided that no material so nearly met the requirements as a cement tile.

After the regular procedure of advertising for bids, a contract was formulated and entered into between the United States Government and this Company in October, 1912.

Acting upon our suggestion, the Commission decided to have all the tile manufactured on the Isthmus, and a plant was established by our Company at Paraizo, Canal Zone. In February, 1913, experienced men from our factories in the States, began the manufacture of over one million square feet of roofing; additional labor, comprised mostly of Jamaican and Barbadian negroes, being obtained on the Isthmus. After completion, the material manufactured was stored in the yards at Paraizo, and subsequently transferred in special railroad cars provided by the Panama Railroad Co. to Balboa, some six miles distant.

The erection of these roofs was begun in June, 1913, by our own regular efficient crews, and the 750,000 square feet shown in the bird's-eye view were all completed in January, 1914. In the upper right-hand corner are shown the concrete foundation settings for the large covered piers 160x1000 feet in size. These piers, with a few of the other buildings constructed since the picture was made, will take up the balance of the 250,000 square feet of "Bonanza."

There will be approximately 30 buildings under cover, varying in size from the largest, the piers mentioned above, to the small sanitary buildings. The longest building illustrated, the lumber and equipment shed on the right, is over 600 feet long, while the widest, the machine shop on the extreme left, is over 200 feet wide. These figures give some idea of the immensity of the project. The only buildings to be entirely enclosed are the general store house in the center of the picture and the office building now under construction. All other buildings will be entirely open to allow for free ventilation. The roofs have large overhangs at all points, and these are of sufficient size to prevent the rain from beating into the buildings. Practically all of the lighting of the buildings is obtained by the use of over 14,000 of "Bonanza" wire glass insert tile, well distributed in the roof.

The most vital points in considering a suitable roof for these buildings were permanency, maintenance, cost, waterproof and fireproof features, and last but not least, as cool an interior as possible. Needless to say, the sun's rays are extemely hot, but these are readily diverted so that the shops are at all times most comfortable. There are few places where the rainfall is as heavy as on the Canal Zone, the heaviest fall of 5.86 inches in one hour having been recorded by the Government instruments at this very point, on June 2, 1906.

The weight of this vast amount of roofing is almost 8000 tons. In its manufacture the best Portland Cement and Silica Sand, obtained by the Government at Point Chamay, Panama, were used. Specifications called for guarantee of 150 pounds per square foot, evenly distributed load, with the tile under four-foot support. First test made on three week's old tile showed over 250 pounds, so that no further tests were made. The entire manufacture and erection, under the supervision of duly appointed inspectors, at all times met with the hearty approval of the Commission.

American Cement Tile Mfg. Co., Lincoln, N. J. Plant

From this plant we handle the entire East. Only 25 miles from our offices at 29 Broadway, New York City.

Didier-March Co., Keasbey, N. J.

90,000 square feet. Entire clay products plant covered.

City of New York Catskill Water Supply

Typical of 47 *buildings*, showing special design of tile roof now under contract; the largest roofing order of the kind ever placed.

Barlow Foundry Co.

Showing flat roof tile and flat tile gutters ready for composition covering. The large plates cover the saw tooth gable ends.

Hunter-Lukenbill Co., Engineers

Nelson Valve Co., Philadelphia

Entire Plant.

100,000 square feet. Installed 1909-1910.

Nelson Valve Co.

This is typical of all buildings showing splendid construction.
All walls are concrete, steel sash throughout.

Somerville Iron Works, Somerville, N. J.

80,000 square feet. Entire Foundry Plant covered. Original order placed September 1909, with three repeat orders in 1912

Edison Electric Illuminating Co., Brooklyn, N. Y.

This further demonstrates the great trust placed upon "Bonanza" roofs as used on a modern metropolitan electric power plant

Plant of Syracuse Crucible Steel Co., Syracuse, N. Y.

Covered in its entirety with interlocking tile on pitched roofs and flat 1¼-inch tile on flat roofs, a total of over 500,000 sq. ft.

Walden Knife Co., Walden, N. Y.

Entire Plant of 43,000 square feet. Installed October, 1915. In these buildings are manufactured Ease rollers), so that a perfect roof is most essential.

Standard Oil Co., Newark, N. J.
Garage. Installed 1912.

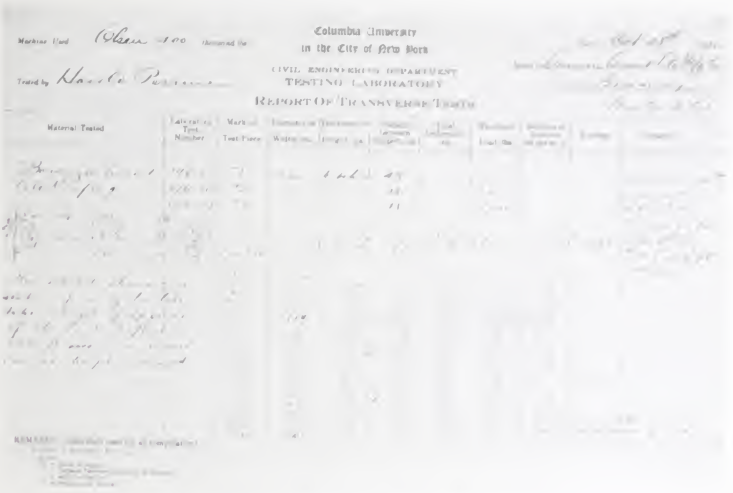
Anheuser-Busch Brewing Co., St. Louis, Mo.
Loading Platform.
Covered in 1906. Also covered new warehouse in 1913

Pennick & Ford Can Co., New Orleans, La.

15,000 square feet. Installed May, 1912. Monitors finished by our plates. Note finish on gable walls.

Union Carbide Co., Welland, Ontario

Four buildings covered with "Bonanza" interlocking tile shipped from our Wampum, Pa., Plant. Duty figured in cost to customers. 52,000 square feet. Installed Winter of 1913-1914.



Columbia University
in the City of New York
CIVIL ENGINEERING DEPARTMENT
TESTING LABORATORY
REPORT OF TRANSVERSE TESTS

Columbia University Test Facsimile

Test of Standard Interlocking Tile on a Four-foot Support

Showing an evenly distributed load of 2,300 pounds without fracture to tile.
With a total area of eight square feet, the test shows
a per square foot load of 483 pounds

Description

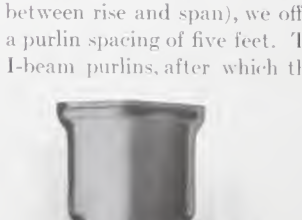
"BONANZA" tile are made 26 inches wide, 52 inches long and 7/8 inch thick with a roll along one edge and a rabbet on the opposite edge. When placed on the roof, the roll interlocks with the rabbet on the next tile, and with the addition of elastic rubber cement, forms watertight joints. The cross joints are formed by lapping and staggering each row of tile over the next lower row about four inches, these joints also being pointed with the elastic cement. The tile are held in place by means of an offset at the top, extending the full width of the tile. From the illustrations can be seen the pleasing brick-red color of the tile, while the underside has a smooth white finish, obtained by our own patent process. Provision is made for a one-point ventilation at each side roll to eliminate the possibility of ordinary condensation conditions. The cut on page 5 shows the front and back view of the standard tile.

Interlocking Tile—Dimensions and Weights

Size of tile	26x52 inches
Thickness of tile	7/8 inch
Surface exposed to weather	24x48 inches
Number of tiles per square of roof (100 sq. ft.)	12½
Weight of single tile	110 pounds
Weight per square of roof	1375 "
Weight per square foot	13¾ "

Flat Roof Tile

Where the roof construction is less than one fifth pitch (ratio between rise and span), we offer our 1½ inch flat slab which spans a purlin spacing of five feet. The ends are laid directly on flange of I-beam purlins, after which the joints are pointed and the entire roof covered with some form of composition roofing. This construction is best seen on pages 25 and 28. Weighing but seventeen (17) pounds to the square foot, the steel design is reduced to a minimum, as compared with the solid slab construction. This tile, being made and seasoned in our factories, can be laid under any weather conditions with no possible danger of freezing.



Composition

"Bonanza" tile embody in their manufacture clean, sharp Lake or Sound sand and best Portland cement, which, combined under our secret process, form a thoroughly hard and dense mass, impervious to water and elements, making a roof that is today protecting millions of dollars worth of costly machinery and materials.

Roof Structure

There being no wood sheathing, nailing strip or fastening of any kind required, "Bonanza" construction is simplicity itself, only a steel superstructure being required, properly designed to carry a total roof load of from 45 to 50 pounds per square foot, with channel purlins in the pitched roofs and I-beams in the flat roofs. The interlock and overlap of tile obviates any fastening, forming a single unit and provides an expansion joint in every side and cross joint. Our Engineer's Data Sheet Book should be referred to for details of steel construction.

Strength and Fire Resistance

From report made by the testing Laboratory of the Columbia University, on page 31, and the crude test as shown by the loading of a slab with cement bags, a good idea may be obtained of the remarkable carrying capacity of a "Bonanza" tile. The average breaking down load, shown by the Columbia University, was approximately 350 pounds per square foot. The tile are thoroughly reinforced with metal which has approximately one-quarter inch covering on the under side to prevent corrosion.

From actual experience it has been proven that "Bonanza" Roofing will resist fire and remain intact as long as the superstructure is there to carry it. From actual fire tests made by the Brooklyn Polytechnic Institute, with the temperature at 1700 degrees F., in the course of one hour and five minutes tile showed no sign of disintegration, this test having been made for the Bureau of Buildings of the City of New York, as per facsimile letter on page 39.

"Bonanza" Sky-Light Tile

Reference to the double page in this book and other illustrations will show our "Bonanza" Sky-Light tile, which consists of our standard interlocking tile with an insert of ¼-inch ribbed wire glass, size 14 x 24 inches. These eliminate expensive metal flashing in the ordinary form of sky-light, and can be placed anywhere in the roof, thus giving a perfect light distribution.

Gutters and Wall Plates

"Bonanza" construction is admirably adapted for saw tooth style of roofs, and page 11 shows clearly the use of our flat tile gutter with the gutter saddles ready for waterproof covering. Our saw tooth ridge is shown on page 34.

Where lightness in construction is required, we make wall plates to suit conditions such as shown on monitor and saw tooth ends, also between and above windows. Our standard flashing tile below monitor windows is shown on page 40. The finish on gable ends of building is made by the use of our end finishing tile shown on page 33, which has a downward extension eight inches deep.

Ventilator Collar Tile and Specials

We manufacture a special tile for carrying ventilators or for pipe openings, this being formed by a properly constructed collar on two adjacent tile, details to be had on application.

"Bonanza" Reasons

Simplicity in steel superstructure.

Fireproof, water and weatherproof.

Total absence of expensive yearly maintenance costs.

Reduction or entire elimination of insurance.

Pleasing architectural appearance.

Everlasting under ordinary mill conditions.

"Optimistics"—Not Prejudiced

"They have now been in service about eight years and show no signs of deterioration."

"Can only say that we were so well pleased with the first roof we bought from you, that we got another one last year and intend to adopt this as standard."

"Your tile roofing has been on our car barn for the past seven years and has given entire satisfaction."

"The fact that we first installed the roof on the boiler house, and later bought the same roof for our new storeroom, is sufficient proof that the material is doing the work."

"In the four years that this roof has been in service we have not had any trouble at any time with it."

"The roof shows no sign of deterioration, and we are now pretty well satisfied that it should give entire satisfaction, and require practically no upkeep cost for a very long time."

"Were I to put up another cement building I would certainly specify your goods."

"We consider it the most satisfactory roof of any with which we have had experience."

"Appear to the writer that they would be a good roof for any building requiring a roof of light nature."

"Your 'Bonanza' Cement Tile Roofs are giving us very good satisfaction, and we are well pleased with them."

"Giving excellent satisfaction. We have had no trouble whatever with it."

"The 'Bonanza' Tile Roof which you placed on our machine shop, has been in service more than three years, and is proving extremely satisfactory and in every particular up to your guarantee."

"About five years ago we built a new fire-proof boiler house on which we used your 'Bonanza' Cement Tile Roofing and it has given us entire satisfaction, and we feel is the best roofing we could have used on this building."

"If we were building any further additions we would adopt this roof."

"Have given us satisfaction in every respect. The roofs are water-tight throughout and did not need maintenance."

"The Cement Tile Roofs which you erected for us are giving very good satisfaction."

"The roof you erected on our Cooling Tower Motor House is still giving complete satisfaction."

"It is very satisfactory in every respect, and has not given us one moment's trouble since it was put on."

"We can find no flaws in your roofing. It is satisfactory."

"We would not use any other grade of roofing on our permanent buildings. We figure that on any building constructed for fifty years life, or even less, that your tile is far the cheapest and most efficient."

"This roof has been in service for the past eight years, giving entire satisfaction. Roof shows no deterioration and maintenance charges have been nothing up to the present time."

"It has given entire satisfaction and is in excellent condition. We regard it as very desirable because of its fire-proof qualities and the fact that it is not subject to corrosion."

"This roofing has given us no trouble whatever and we find it very satisfactory in every way, saving us a large amount of insurance, as by using this type of roofing it makes our buildings entirely fire-proof."

"The 'Bonanza' Tile Roofing which we installed on our power plant when we built it about seven years ago, has given first-class satisfaction and is all that we could desire in the way of a first-class fire proof roof."

"Your cement tile roof has given us entire satisfaction since it was installed eight years ago. When we are ready to make an addition to our present Forge Room we will want to use your Bonanza Roof."

Those Who Know

Imagine the map of North America and realize that from the Arctic Ocean to the Gulf of Mexico and from the Atlantic Ocean to the Pacific the continent is dotted with "Bonanza" roofs. All weather and industrial conditions are alike and of indifference to "Bonanza." Unfortunately, space permits only a partial listing of "Bonanza" installations.

Alabama

Birmingham
- Alabama Power Co.
- Birmingham Railway Light & Power Co.
- Pratt Consolidated Coal Co.
- U. S. Cast Iron Pipe & Foundry Co.

Fairfield
- Tenn. Coal, Iron & R. R. Co.

Mussella
- Alabama Power Co.

Montgomery
- Tillis, Richard
- Western Railway of Alabama

Connecticut

Bridgeport
- Connecticut Breweries
- Crane Valve Co.
- Salts Textile Mfg. Co.

Fairfield
- Fairfield Rubber Co.

Greenwich
- Gilbert & Bennett Mfg. Co.

Hartford
- Great Telephone Pay Station Co.
- Whitlock Coil Pipe Co.

Middletown
- Clark Bros. Belt Co.

Plantsville
- Hinkenbee Forging Co.

Delaware

Wilmington
- Harlan & Hollingsworth
- Pusey & Jones Co.

Florida

Bagdad
- Bagdad Land & Lumber Co.

Georgia

Atlanta
- Destructor Co.

Savannah
- Destructor Co.

Tallulah Falls
- Georgia Railway & Power Co.

Illinois

Benham
- United Coal Mining Co.

Chicago
- A. Jaus Jr. Co.
- Mrs. Jaudon Railway Co.
- Metropolitan West Side Elevated Ry. Co.
- Peoples Gas Light & Coke Co.

East St. Louis
- General Chemical Co.
- Missouri Malleable Iron Co.

Granite City
- American Steel Foundries

Joliet
- Illinois Steel Co.

Moline
- Republic Iron & Steel Co.

Indiana

Beech Grove
- St. Francis Hospital

Buffington
- Universal Portland Cement Co.

Gary
- Indiana Steel Co.

Hagerstown
- Tide Water Pipe Co.

Indianapolis
- Link-Belt Co.
- Penna. Lines W. of Pittsburgh

Kokomo
- Pittsburgh Plate Glass Co.

Lafayette
- Ross Gear & Tool Co.

Kentucky

Shelby
- Consolidation Coal Co.

Louisiana

New Orleans
- Pennock & Ford Cun Co.

Maine

Portland
- Portland Gas Light Co.

Maryland

Brandt
- Maryland Port Cement Co.

Cumberland
- Cumberland Elec. Ry. Co.
- Electric Development Co.
- Edison Electric Illuminating Co.

Massachusetts

Beverly
- Gulf Refining Co.

Boston
- Cochrane Chemical Co.

Fall River
- Fall River Gas Co.

Fitchburg
- Boston & Albany R. R. Co.

Somerville
- Gulf Refining Co.

West Franck
- Williams, Franklin D.

Worcester
- American Iron & Steel Co.

Michigan

Detroit
- Aluminum Castings Co.
- Bagley Estate
- Detroit Steel Products Co.
- Michigan Steel Boat Co.
- Solvay Process Co.

Ecorse
- Palmer Motor Car Co.

Flint
- Weston-Mott Co.

Highland Park
- Ford Motor Car Co.

Marenci
- Ohio Dairy Co.

Sault Ste. Marie
- Union Carbide Co.

Wells
- Stephenson Charcoal Iron Co.

Zug Island
- Detroit Iron & Steel Co.

Missouri

St. Louis
- American Car & Foundry Co.
- Anheuser-Busch Brg. Assn.
- Berry-Weihmiller Mach. Co.
- Diesel Engine Co., Inc.

New Jersey

Bound Brook
- Central R. R. of New Jersey

Camden
- Garden State Dairies
- Standard Oil Co.

Dover
- Ulster Iron Works

Edgewater
- General Chemical Co.

Elizabeth
- Hitchings & Co.

Garwood
- Anchor Post Iron Works

Harrison
- Crucible Steel Co.
- Otis Elevator Co.

Newark
- Barlow Foundry Co.
- Carnegie Steel Co.
- Ludow Tanners Co.
- Mundy, J. S. Co.
- Newark Tube & Metal Co.

Paterson
- Destructor Co.

Perth Amboy
- Dellar-Marck Co.

Phillipsburg
- Warren Foty & Machine Co.

Underciff
- General Chemical Co.

New York

[illegible]
- Alpha Portland Cement Co.

[illegible]
- [illegible]

[illegible]
- N. Y., Westchester & Boston R. R. Co.

Brooklyn
- Edison Elec. Illuminating Co.
- Knickerbocker Theatre
- Manhattan Bridge Co.
- Morrill Brothers

Buffalo
- Franklin Iron Works
- Strong Steel Foundry Co.

Elmira
- Thatcher Mfg. Co.

[illegible]
- [illegible] Mfg. Co.
- Western Block Co.

[illegible] L. I.
- [illegible]

[illegible]
- [illegible] Co.

[illegible]
- [illegible] Mfg. Co.

New York City
- N. Y. Board of Water Supply

Niagara Falls
- Hydraulic Power Co.

Olean
- Clark Brothers
- Vacuum Oil Co.

[illegible]
- [illegible] Mfg. Co.

[illegible]
- [illegible] Co.

[illegible]
- [illegible]

[illegible]
- [illegible] Power Co.

[illegible]
- [illegible]

[illegible]
- [illegible] Co.

Schenectady
- General Electric Co.
- Mohawk Gas Co.

[illegible]
- [illegible] Co.
- [illegible] Steel Co.
- [illegible] Co.

[illegible]
- [illegible] Co.

[illegible]
- [illegible] Co.

North Carolina

[illegible]
- [illegible] Power Co.

[illegible]
- [illegible] Power Co.

[illegible]
- [illegible] Mills

[illegible]
- [illegible] Co.

Ohio

[illegible]
- [illegible] Machine Co.
- International Harvester Co.
- Star Drilling Machine Co.

[illegible]
- [illegible] Williams Co.

[illegible]
- Tide Water Pipe Co.

[illegible]
- American Fork & Hoe Co.

[illegible]
- Columbia Chemical Co.
- Pittsburgh Valve & Fit. Co.

[illegible]
- [illegible] Co.
- [illegible] Co.

[illegible]
- Tide Water Pipe Co.

[illegible]
- [illegible] Iron & Coal Co.

[illegible]
- [illegible] Co.
- [illegible] Co.
- Cleveland [illegible] Co.
- Cleveland [illegible] Mfg. Co.

[illegible]
- Cleveland Worsted Mills
- Cleveland Railway
- Cleveland [illegible] Co.
- [illegible] Co.
- [illegible] Co.
- [illegible] & [illegible] Co.
- Otis Steel Co.
- [illegible] & [illegible] Co.

[illegible]
- [illegible] of Pittsburgh

[illegible]
- [illegible] & [illegible] Co.

[illegible]
- [illegible] Co.

[illegible]
- Ohio [illegible] Co.

[illegible]
- American [illegible] Co.

[illegible]
- Tide Water Pipe Co.

[illegible]
- Ohio [illegible] Co.

[illegible]
- [illegible] Glass Co.

[illegible]
- [illegible] Co.

[illegible]
- [illegible] Co.

[illegible]
- [illegible] Machine Co.
- Toledo Glass Co.

[illegible]
- Chicago, Cleveland Car Roofing Co.

Youngstown
- Carnegie Steel Co.
- [illegible] Co., Wm. B.
- Republic Iron & Steel Co.
- United Eng. & Fdry. Co.
- Youngstown Sheet & Tube Co.

Pennsylvania

[illegible]
- Pennsylvania Railroad Co.

[illegible]
- American Steel & Wire Co.

[illegible]
- [illegible] County Jail

[illegible] Falls
- Pittsburgh [illegible] Co.

[illegible]
- American Car & Foundry Co.

[illegible]
- [illegible] Co.
- [illegible] Co.
- [illegible] Co.
- [illegible] Co.

[illegible]
- American [illegible] & Wire Co.

[illegible]
- [illegible] & [illegible]

[illegible]
- American [illegible] Co.

[illegible]
- [illegible] Steel Works

[illegible]
- [illegible] Coal & [illegible] Co.

[illegible]
- Standard Oil Co.

[illegible]
- [illegible] of Pittsburgh

[illegible]
- Tide Water Pipe Co.

[illegible]
- Carnegie Steel Co.

[illegible]
- General Chemical Co.
- [illegible] Co.
- [illegible] College
- [illegible] Co.
- [illegible] Co.
- [illegible]

[illegible]
- Baldwin Locomotive Works
- [illegible] Iron Works

[illegible]
- [illegible] Coal & Coke Co.

Pennsylvania—Con.

Eldred
Tide Water Pipe Co.
Erie
Erie Engine Works
Erie Foundry Co.
Ford City
Pittsburgh Plate Glass Co.
Franklin
Atlantic Refining Co
Greensburg
Keystone Coal & Coke Co.
Pennsylvania Swing Co.
Greensburg Coal Co.
Homestead
Carnegie Steel Co.
Hudsondale
Tide Water Pipe Co.
Kaulmont
Pennsylvania Fireproofing Co.
Lansford
Lehigh Coal & Naviga. Co.
Lebanon
American Steel & Iron Co.
Lewiston
Lewiston & Reedsville Elec. Ry. Co
Lower Mann
Mann, Jas. H. Co.
Marcus Hook
General Chemical Co.
Marianna
Pittsburgh-Buffalo Co.
Martins Creek
Alpha Portland Cement Co
Meadville
Meadville Malleable Iron Co.
McKees Rocks
Pressed Steel Car Co.
Pennsylvania Malleable Co.
Midland
Pittsburgh Crucible Steel Co.
Muncie
Tide Water Pipe Co.
Nesquehoning
Lehigh Coal & Naviga. Co.
New Brighton
W. E. Leard
Oakmont
Best Mfg. Co.
Oil City
Citizens Traction Co.
Reid, Jos., Gas Engine Co.
Palmerton East
New Jersey Zinc Co.
Philadelphia
American Pulley Co.
Lewis, Jno. T. & Bro. Co.
Nelson Valve Co.
Phila. Rapid Transit Co.
St. Mary's Hospital
Union Petroleum Co.
Pittsburgh
American Locomotive Works
American Steel Foundries
Atlantic Refining Co.
Damascus Bronze Co.
Garrison, A., Foundry Co.
Hubbard & Co.
United Eng. & Fdry. Co.
Portage
Forge Coal Mining Co
Pottstown
Warwick Iron & Steel Co.
Reading
Metropolitan Electric Co
Robesonia Iron Co.
Rochester
H. C. Fry Glass Co.
Seek
Lehigh Coal & Naviga. Co
Sharon
Nat. Malleable Castings Co.
Sharon Foundry Co.
Shumans
Tide Water Pipe Co
Sunbury
Susquehanna Silk Mills
Swedeland
Hecksher, Richard & Sons Co.
Swissvale
Union Switch & Signal Co.
Tamaqua
Lehigh Coal & Naviga. Co.
Thurlow
American Steel Foundries
Titusville
Tide Water Pipe Co.
Wampum
Crescent Portland Cem. Co.
Windber
Berwind White Coal Min. Co.
York
General Roofing Mfg. Co.

Rhode Island

Newport
United States Navy
Pawtucket
Pawtucket Gas Co.

South Carolina

Belton
Green, Spartanburg & Anderson Ry.
Cothran
Green, Spartanburg & Anderson Ry.
Great Falls
Southern Power Co.

Tennessee

Chattanooga
Chattanooga Gas Co.
Chattanooga St. Ry. Co.

Texas

Port Arthur
Gulf Refining Co.

Virginia

Danville
City of Danville
Laurel
Clinchfield Coal Corp.
Norfolk
Anheuser-Busch Brg. Asso.
Pulaski
General Chemical Co.
Pulaski Mining Co.
Richmond
American Locomotive Co.

Washington, D. C.

Washington Steel & Ord. Co.

West Virginia

Cabin Creek Junction
Virginia Power Co.
Glen Ferris
Electro Metallurgical Co.
Huntington
Chas. Boldt Glass Co.
Manheim
Alpha Portland Cement Co.
Martinsburg
Interwoven Mills, Inc.
Worthington
Four State Coal Co.

Wisconsin

Appleton
Appleton Coated Paper Co.
Manitowac
Chicago & N. W. R. R. Co.

Canada

Bois Blanc Island, Ont.
Detroit Windsor Ferry Co.
Cape Breton
Nova Scotia Steel & Coal Co.
Conniston, Ont.
Mond Nickel Co.
Copper Cliff, Ont.
Canadian Copper Co.
Sault Ste. Marie, Ont.
Algoma Central & Hudson River R. R.
Shawinigan Falls, Que.
Aluminum Co. of America
Northern Aluminum Co.
Welland, Ont.
Union Carbide Co.

CYRUS C. MILLER
PRESIDENT BOROUGH OF THE BRONX

CITY OF NEW YORK
BUREAU OF BUILDINGS
BOROUGH OF THE BRONX
THIRD AVENUE AND 177TH STREET
OFFICE OF THE SUPERINTENDENT

JAMES A HENDERSON
SUPERINTENDENT

May 29th, 1913.

American Cement Tile Mfg. Co.,
29 Broadway, N. Y. City.

Dear Sirs:-

At a regular meeting of the Superintendents of Buildings of New York City held at Borough Hall, Brooklyn, on May 20, 1913, present- Superintendents Carlin of Brooklyn, Moore of Queens, Seaton of Richmond and Henderson of The Bronx, the cement roof tile manufactured by the American Cement Tile Mfg. Co., and tested by Prof. Moore at The Polytechnic Institute, Brooklyn, March 19th to April 2nd, 1913, was approved for general use as a fireproof roofing material as required by Section 94 of the Building Code, in the Boroughs of Brooklyn, Queens, Richmond and The Bronx in the City of New York.

Respectfully,

James A Henderson

Superintendent of Buildings,
Borough of The Bronx.

F.

Standard Flashing Tile